

**Before the  
Federal Communications Commission  
Washington, D.C. 20554**

In the Matter of	)	
	)	
Connect America Fund	)	WC Docket No. 10-90
	)	
ETC Annual Reports and Certifications	)	WC Docket No. 14-58
	)	
Rural Broadband Experiments	)	WC Docket No. 14-259
	)	

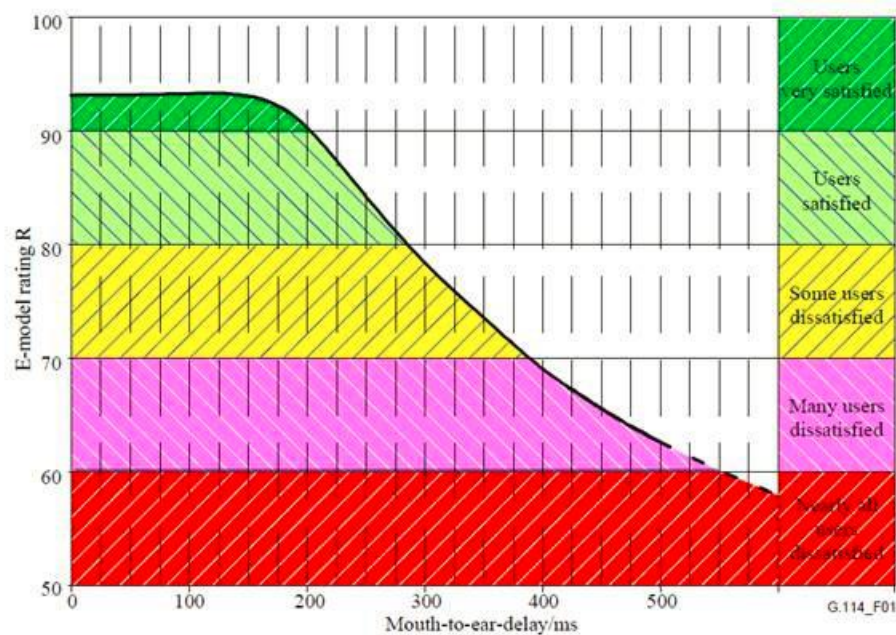
**Reply Comments of Percipio Industries, LLC**

Percipio Inc. advises several Rural LECs and hereby files these Reply Comments in the above referenced docket.

Our Reply Comments are focused on the comments submitted for weighting and the inclusion of high latency network solutions for voice services.

**Latency**

- 1) The Fiber to the Home Council (Comments of the Fiber to the Home Council Americas on the Further Notice of Proposed Rulemaking, WC Docket No. 10-90, pgs. 7-8) cites the ITU recommendation “that a one-way delay of 400ms should not be exceeded for general network planning” and then suggests that voice calls “require even lower latency”. This is a hugely important issue that appears to be underemphasized due to ViaSat and Hughes’ prolific comments. We affirm that in order for rural areas to have reasonably comparable services to those in urban areas that latency should be a first order determination of success in the auction. As other filers have suggested, only a bid weight of 100 can ensure such an outcome. We are indifferent to whether high latency should have a +100 weight or low latency a -100 weight. Additionally, based on the ITU data, we suggest that the Commission redefine the high latency tier as anything above 400ms (not 750ms as currently described). In the graph provided, nearly all users are dissatisfied at latencies over 550ms.



The source of funds for the CAF2 auction mandates that relatively comparable voice services are an essential component of this auction. (The Order even requires that a stand-alone voice offer be provided.) It would be an abject failure to enable results that require neighboring rural residents to communicate with a 1.5 second round-trip lag if both locations are served by the satellite-broadband provider (essentially having a quality of service equivalent to a walkie-talkie).

It is highly possible that whole areas will be moved from terrestrial solutions for voice to satellite-broadband, based on the processes described in the Order for an incumbent ETC to be relieved of ETC obligations if federal support is awarded to another ETC. And if support is not awarded to anyone in an area, it is possible that the only option that a rural customer in locations served by a satellite-broadband provider may have for voice services may become voice services over the satellite-broadband connection as incumbent Price Cap carriers are replaced by the satellite-broadband service provider: *“Price cap carriers that decline the state-level commitment will have the federal high-cost universal service obligation to offer voice telephony services in those census blocks that are determined to be high-cost or extremely high-cost, and unserved by an unsubsidized competitor, until they are replaced by another ETC that is required to offer voice and broadband service to fixed locations that meet the Commission’s public service obligations.”* (See paragraph 52 FCC 14-190, *CAF Phase II Order*, 18 December 2014).

A key concern should be that the replacement for terrestrial voice will be the high latency satellite services.

Also, the inclusion of satellite-broadband and high latency services as a competitive option may impact high cost or extremely high cost locations as traditional providers of voice services may be relieved of their obligations to offer voice telephony regardless of an award of support: *“Incumbent price cap carriers shall be relieved of their existing federal high-cost universal service obligations to offer voice telephony service in census blocks served by unsubsidized competitors on the date that there is a determination that there is an unsubsidized competitor offering 10/1 Mbps in those census blocks.”* (see paragraph 69,

FCC 14-190, *CAF Phase II Order*, 18 December 2014). Both Hughes and ViaSat have stated in their comments that they can support the baseline 10/1 and voice telephony based on their currently deployed satellite-based broadband networks.

The inclusion of high latency voice telephony services has created a very dangerous opportunity for low latency, traditional voice telephony to be replaced with high latency, voice telephony over satellite-broadband networks.

### **Satellite-Broadband, Latency and Outages**

- 2) Further, we also agree with comments made in the Adtran Petition for Clarification or Reconsideration, dated July 5, 2016, and support Adtran's request as stated in their Petition: *"ADTRAN thus requests that the Commission clarify, or if necessary reconsider the CAF Auction Order, to specify that an applicant choosing the high-latency option be able to demonstrate an MOS score of four or better using the Conversation-listening tests under ITU-T Recommendation P.800. Such a decision would ensure that the subsidized services can support high-quality voice services, and thus well serve the public interest."*
- 3) Of particular concern with satellite based voice service is the fact that emergency services will also be unavailable during twice yearly, recurring network sun outages. Are services with known outages for periods of many days considered "comparable services"?
- 4) The distance of 22,300 miles for geosynchronous orbit is the basis for the latency concern. The up and down path will route approximately 45,000 miles for the round trip to support all user services. When additional network paths are required for connectivity to other satellite-based broadband services or users, latency will increase. Increases in latency will impact the service quality and it may, for latency sensitive applications, impact the application being used.

### **Public Interest Obligations, Eligible Telecommunications Carrier**

- 5) The Order makes it likely that the only voice service option satellite-broadband customers will become voice services over the satellite-broadband connection: *"Price cap carriers that decline the state-level commitment will have the federal high-cost universal service obligation to offer voice telephony services in those census blocks that are determined to be high-cost or extremely high-cost, and unserved by an unsubsidized competitor, until they are replaced by another ETC that is required to offer voice and broadband service to fixed locations that meet the Commission's public service obligations"* (see paragraph 52<sup>1</sup>).
- 6) A low latency weight of 75 or higher is required to recognize the limitations of high latency solutions for high cost and extremely high cost locations.

### **Support for Embedded or Sunk Investment**

- 9) ViaSat and Hughes have already launched satellites and in their Comments, they have referenced decisions to launch a new series of satellites. Despite acknowledgement that the

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<sup>1</sup> FCC 14-190, *CAF Phase II Order*, December 18, 2014.

decisions to launch these satellites were made without any access to high and extremely high cost support, they are now requesting such support to augment their return on this investment. In recognition of the concerns with network solutions that have known network outages and lower quality support for many services due to high latency, the weighting for low latency and performance tiers for speed and usage that are not subject to such known service issues should be rated very highly relative levels for applicants who are willing to engage in the provision of Tier 3 ("Above Baseline) or 4 ("Gigabit) services at or below the reserve price for the funded census blocks.

### **Weights - Performance Tiers, Speed and Usage**

- 10) Many comments concerning the weighting of the performance tiers do not conform with the proposed formula for weighting that the Commission provided in paragraph 205 footnote 406<sup>2</sup>. To ensure that the Competitive Auction proceeds as quickly as practicable, the Commission should reject all suggestions that do not fit within the currently published formula to weight bids, including the RWA, the ACA and Hughes<sup>345</sup>.
- 11) As suggested by the ITTA<sup>6</sup> and US Telecom<sup>7</sup>, assigning incremental weights below 70 per tier will substantively bias the auction to the lower two tiers (Minimum and Baseline) and result in non-comparable systems getting deployed in these locations.)
- 12) The goal of the auction is to solve the rural broadband problem. To ensure consumers in rural and urban high-cost areas have access to reasonably comparable services, the best solution for the rural broadband problem is to deploy fiber networks as deeply as practicable with the support that is available. This auction should strive to deliver as much benefit as possible for the existing funds and purpose. To do this, the Commission should highly weight bids that provide comparable services throughout all regions at the lowest life cycle cost over lower bids advocated by participants in the lower performance tiers. As we stated in our initial response to the Order, any bid under the reserve price in a Tier should beat any bid in any lower tier. **Weights in increments of 100 per tier (and 75 for low latency) are required to solve the rural broadband problem.**

**Jim Cook**  
**Percipio Industries, LLC**

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<sup>2</sup> Report and Order and Further Notice of Proposed Rulemaking, FCC 16-64, May 26, 2016.

<sup>3</sup> Comments of the Rural Wireless Association Inc., before the Federal Communications Commission. RWA CAFII Comments-FINAL.pdf. Posted 7/22/2016.

<sup>4</sup> Comments of the American Cable Association., before the Federal Communications Commission. ACA\_CAF\_Phase\_II\_Comments\_07212016.pdf. Posted 7/22/2016.

<sup>5</sup> Comments of Hughes Network Systems LLC., before the Federal Communications Commission. Hughes CAF Bidding comments 7-21-16 FINAL-cleaned.pdf. Posted 7/21/2016.

<sup>6</sup> Comments of ITTA., before the Federal Communications Commission. ITTA Comments on CAF II Auction FNPRM As Filed 072116.pdf. Posted 7/22/2016.

<sup>7</sup> Comments of US Telecom, before the Federal Communications Commission. USTelecom-CAF-Auction-Comments-2016-07-21-FINAL.pdf. Posted 7/22/2016.